

# Trends & Issues in Library Technology

IFLA IT Section Newsletter

June/July 2019

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## Do it like an Athenian!

Athens is known worldwide as “the city that never sleeps” but it is also “the city that never stops eating”. Athenians love going out to eat, especially on Fridays and Saturdays. They start going out for dinner at 21:00 and keep coming until after midnight. So, there is no need to worry if you’re late in Athens, as there is always a place to drop by when the night is over, and your stomach is crying out for some food!



rainbow colored bottles covering the entire wall from top to bottom and there you can sip some Greek liquors and wine!

**This is My Athens**, the official City of Athens Guide, offers a free walk around the city hosted by a local volunteer. You can book this online and truly get to experience what the real Athens is all about.



## Plaka

Right at the foot of the Acropolis hill, Plaka is by far the quaintest neighborhood in Athens, popular with visitors. You won’t find big dance clubs and bars, but this alluring part of the city offers lively, traditional places to enjoy Greek culture year-round, folk music and dancing in Greek restaurants to taste Greek delicacies, as well as tavernas and cosy cafés. When walking in historic Plaka, give yourself the chance to pass by the cosy old-fashion distillery that dates from 1909. The décor is impressive with the

## From the Editor...



Dear Colleagues,

Summer is around the corner and so is IFLA WLIC, held in Athens, Greece in August. Athens will be a wonderful place to visit but come prepared for the hot seasonal temperatures.

In this issue, we are thrilled to feature the new library automation services program at the University of Windsor in Canada, and the novel References Statistics Program (R-StaRS) developed by the International Islamic University Malaysia’s Library Team. We thank the authors for their submissions and encourage our readers to submit any comments or suggestions.

As always, my special thanks to Kathi Miniard from University of Cincinnati Libraries for her support with formatting this issue.

Since IFLA Congress is based in Greece this year, I will leave you with one of my favorite proverbs by Pericles who was an influential figure from Athens:

*“What you leave behind is not what is engraved in stone monuments, but what is woven into the lives of others.”*

Happy reading!

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Information Technology Section Related Sessions located on pages 10 & 11

# NEXT GENERATION LIBRARY AUTOMATION SYSTEM AT UNIVERSITY OF WINDSOR

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The next generation of library automation emerged around 2011 when the concept of Library Services Platform (LSP) was proposed to differentiate between a new type of system and the traditional Integrated Library System (ILS). Based on cloud computing and other latest technologies, LSPs are designed to manage print, electronic and digital resources on one platform. (Breeding, 2011). Since then, the next generation of library automation has been maturing and it has been increasingly adopted by many libraries. The University of Windsor implemented Alma, an LSP product from ExLibris in 2014. With the selection of the same product by the Ontario Council of University Libraries (OCUL) Collaborative Futures (CF) in 2018, the University is joining the consortium towards a shared LSP solution.

## Adopting a Next Generation Library Automation System at the University of Windsor

The University of Windsor ([www.uwindsor.ca](http://www.uwindsor.ca)) is a comprehensive university with about 15,000 students from nearly 100 countries over the world. It is located at Windsor, Ontario, the southernmost city in Canada. The university has two libraries, Leddy Library (the main library) and Law Library. The university libraries hold more than three million items, of which over one million are in electronic or digital form ([leddy.uwindsor.ca](http://leddy.uwindsor.ca)). Prior to migrating to Alma, the libraries maintained their print and electronic collections in multiple places, including Conifer ILS, SFX link resolver and a number of spreadsheets (see Figure 1).

Conifer is an Evergreen ILS implementation in a mini-consortium of the University along with a couple of other smaller institutions in the province. It did not support acquisitions and serials management, therefore other tools, such as Excel spreadsheets and SFX have been utilized to fill in the gap. E-resources management relied heavily on SFX, a link resolver product that lacks functions and controls necessary for this purpose. It had been a big headache for the libraries to maintain their electronic subscriptions and collections. The separate systems and workflows based on the old system architecture were costly, inefficient and problematic,

particularly in the areas of e-resources management, acquisitions and serials management.

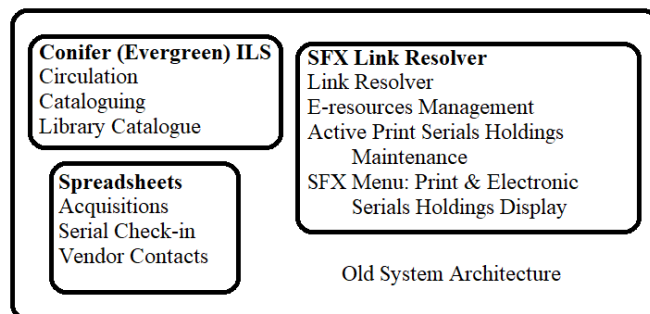


Figure 1. The Old System Architecture

In 2011, the university libraries started to look at new solutions to library automation. A presentation on the future of library systems was delivered to all librarians introducing the concepts of cloud computing and unified resources management. The investigations and discussions over the next generation library automation were initiated. Librarians and library staff expressed various concerns about the new system, including how to protect patron privacy, how to maintain local control over our systems, and how to manage the risk of proverbially putting all our eggs in one basket. In 2013, a next generation ILS Request for Proposal (RFP) committee was established. Following the selection of the new system, the libraries implemented Alma and Primo from ExLibris in 2014. We are also one of the earliest adopters of a next generation LSP in Canada.

The multiple systems and tools listed on Figure 1 have been simplified in the fully integrated system (see Figure 2). The overheads of maintaining multiple systems and workflows were eliminated. The new system supports the management of the entire life cycle of electronic resources management. The front-end, Primo, provides not only the library catalogue but also functions as the one-stop search interface for all forms of library resources. It is also the first time that the university libraries were able to provide a discovery layer service to its users. (Liu, 2016).



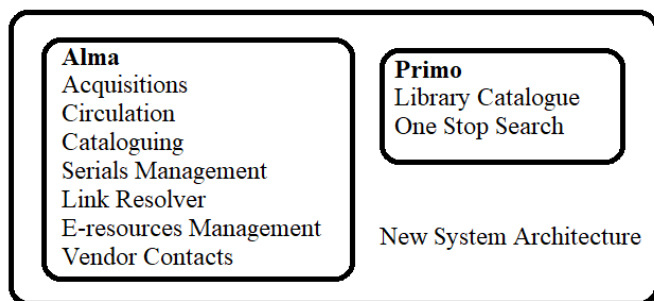


Figure 2. The New System Architecture

## Moving to a Shared LSP within OCUL CF

While being the first member in OCUL to adopt the next generation LSP, the university has been actively initiating and contributing to the conversations and investigations on emerging technologies and systems in the consortium. OCUL is an academic library consortium of twenty-one university libraries in Ontario, the largest province in Canada. It has over fifty years' history of collaboration and cooperation among the members, including group purchasing, shared digital information infrastructure and shared link resolving service (<https://ocul.on.ca/>).

In 2012, the OCUL Technical Advisory Group initiated a series of discussions on cloud computing and the next generation of library automation systems across the province. A unified resources management summit was held in Toronto in 2013. Following that, the OCUL CF project was launched in 2014 aiming for a shared next generation LSP in the province. Several outcomes were articulated, including 1) shared records, cataloguing and electronic resources management, 2) shared records loading, 3) shared discovery, 4) shared patron services and policies, and 5) shared analytics, acquisitions and collection development, etc. The Project consists of the following three phases: feasibility study, system requirements development and procurement preparations, and procurement and implementation. At this time, the first two phases have been completed (<https://ocul.on.ca/projects/collaborative-futures>).

In the summer of 2018, OCUL CF selected the shared next generation LSP product. All participating institutions are planning to implement the new system in 2019 and to go live together by the end of the year. As the first adopter that product and has been live with the system for over four years, the University of Windsor looks forward to continuing to share its experiences with other Ontario institutions as well as

joining in the shared LSP to gain deeper collaboration with other members in the consortium. The shared next generation LSP would help the university leverage its library resources and services to students, faculty and staff.

## References:

Breeding, M. (2011) Current and future trends in information technologies for information units. *El profesional de la information*, 2011, 21(1), p. 9-15.

Liu, G. (2016) Library resources management system in the age of cloud computing. In Y.H. Qi, G.B. Wei & L. Fu (Eds.), *Proceedings of the 7th China and America Library Forum* (pp. 30-40). Kunming, China: Yunnan University Press.



## 4

## How It Works

The process of getting the data from manual to system generated became much easier and less time consuming when using R-StaRS. It was designed using MS Access and includes a number of useful features (Table 1).

Table 1: Features comparison between printed form and R-StaRS

No	Feature	Printed Form	R-StaRS
1.	Tracing no. of enquiries received	✓	✓
2.	Log record for librarian-on-duty	✓	✓
3.	Tracing librarian's duty history	✓	✓
4.	Knowing no. of users entertained	X	✓
5.	Having no. of requests for guest password to use computers	X	✓
6.	Easily searchable library announcements/alerts	X	✓
7.	Easily searchable library phone directory	X	✓

Users are required to login by entering a credential username and password (Figure 2). For first time login, users simply key in the default username and password. They are encouraged to change the default for the next login by clicking at 'Forgot username / password' to edit.

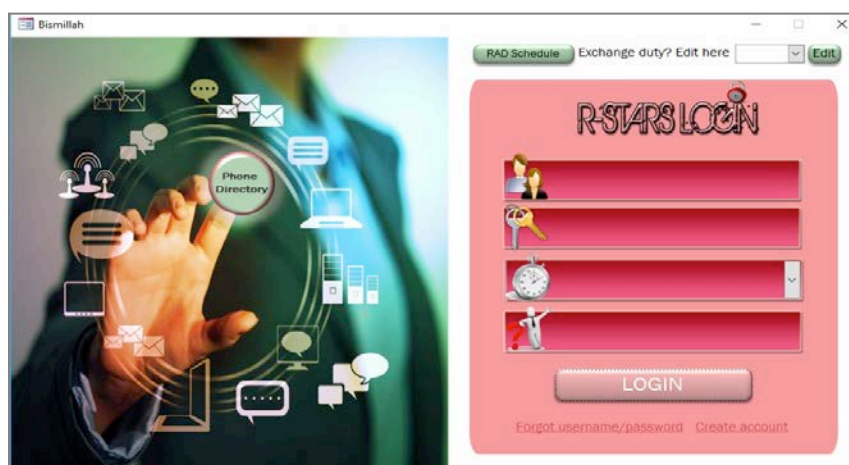


Figure 2: R-StaRS login page

Each staff was initially assigned with the appropriate level of access: 1) admin, 2) super user, and 3) user. The 'admin' level has full privileges over the system where he/she can use all the features available and add/edit/delete any files, forms, queries and reports available. A 'super user' and 'user', has a slight privilege differences in term of features availability and accessibility. The levels of privilege differences are shown in Table 2.

No.	Privileges	User	Super User	Admin
1.	Update duty schedule	✓	✓	✓
2.	Record of users' enquiries	✓	✓	✓
3.	Edit personal profile	✓	✓	✓
4.	View class/visit alerts	✓	✓	✓
5.	View log history	✓	✓	✓
6.	Find announcements	✓	✓	✓
7.	Find staff directory	✓	✓	✓
8.	Update alerts/announcements	X	✓	✓
9.	Update other staff's profile	X	X	✓
10.	Access to statistical reports	X	X	✓

Table 2: Privileges of R-StaRS's users

## R-StaRS Main Modules

R-StaRS has five main modules – alerts, staff profile, enquiry, search and reports (Figure 3). Each component is discussed in more detail below.

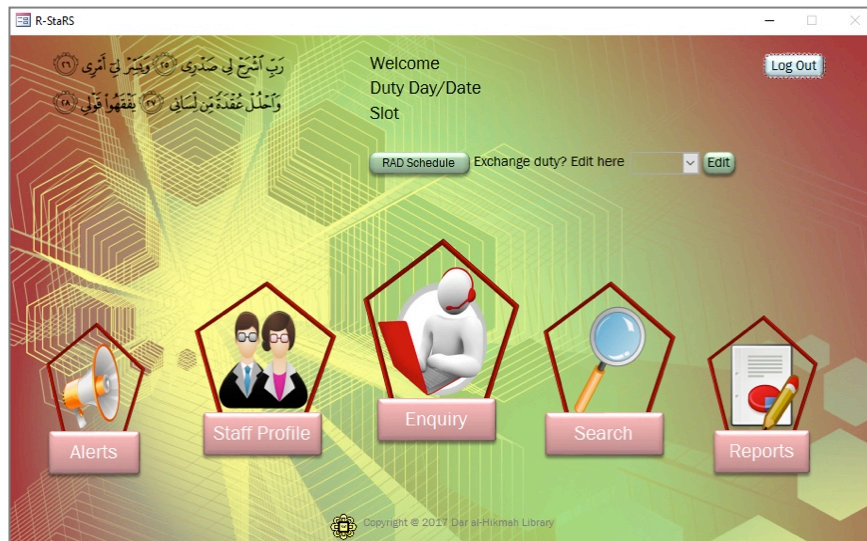


Figure 3: The system main window

### 1. Alerts

It has three individual tabs:

- i. Class Details – details of classes, workshops, etc. are shared here for librarian-on-duty to check the information in response to the user's enquiry.
- ii. Visit Details – visits, accreditation/audit exercises, meetings, etc. can also be shared here for easy reference.
- iii. Issues highlighted at the counter– while staffing the desk, librarian-on-duty is encouraged to read the other enquiries/highlights handled by other colleagues on duty.

### 2. Staff Profile

The Librarians can update their profile; i.e. information on the office name, extension number, etc. They may also check their duty history here.

### 3. Enquiry

In this section, the librarians can get the enquiry form to record reference transactions that occurred during their duty time at the main counter. Elements in the form include:

- i. User details – Librarians record user type and nationality for each reference transaction received – *Required field*.
- ii. Question details – This is to group the question according to the mode of enquiry, type of enquiry and duration of a session to evaluate how much in-depth explanation and clarification is needed – *Required field*.



- iii. Question categories – Some core services, matters related to online resources and connectivity as well as direction for location of services, facilities or/and resources are listed so that librarians could tick whichever item(s) that is/are applicable to the enquiry received.
- iv. Specify other enquiries and action taken for others' notification.

Figure 4: Record each transaction using enquiry form

#### 4. Search

Internal email alerts/announcements that are deemed important/appropriate will be made available in the system for librarian-on-duty to refer at any time whenever necessary. It is searchable by:

- i. From – Person who sent the email alert.
- ii. Subject – Email subject.
- iii. Department – The department to which the person belongs.

If the librarian-on-duty is asked about the staff's contact information, he/she can easily get it from the Staff Directory. It lists contact information of the library staff including branch libraries.

#### 5. Reports

This is the most exciting part where various reports are generated from a number of queries set earlier to be analyzed for service improvement.

### Past, Present and Future

When we started the discussion on having an electronic system replacing the traditional way of collecting reference statistical data, we were not encouraged to purchase a commercial application due to budget limitation. We thus decided to use MS Access as the University has licensed the software, and we developed a simple system to reduce the frustration and struggle to obtain data for analysis.

One major problem that we faced during the initial stage was how to design a simple system as none of the librarians had any background knowledge of and/or experience in using the software. Despite this, we were able to find abundant online tutorials, blogs, forums, etc. on the use of MS Access and how to develop a system using this specific software. Over time and with all the effort and 'trials and errors', R-StaRS finally came into being. After several discussions, comments and feedbacks received from the team, we managed to improve the system until it could be used to replace the printed forms used at the main reference counter.

Although R-StaRS was installed on a single computer at the main reference counter, it is also needed to be accessed by the admin to frequently monitor the usage and track the reports. To enable it to be shared by more people, we opted to use the Google Drive platform for Windows installed on the computers at the main reference counter and the admin. Unfortunately, while accessing it concurrently, we detected a technical problem in the system. At the end, it seemed to have created two separate files instead of one and one of them was a conflicting file. It was difficult to trace which of these two was the updated one (Figure 5). This was another obstacle that we faced and took a deep exploration of sources on the Internet to find a solution.

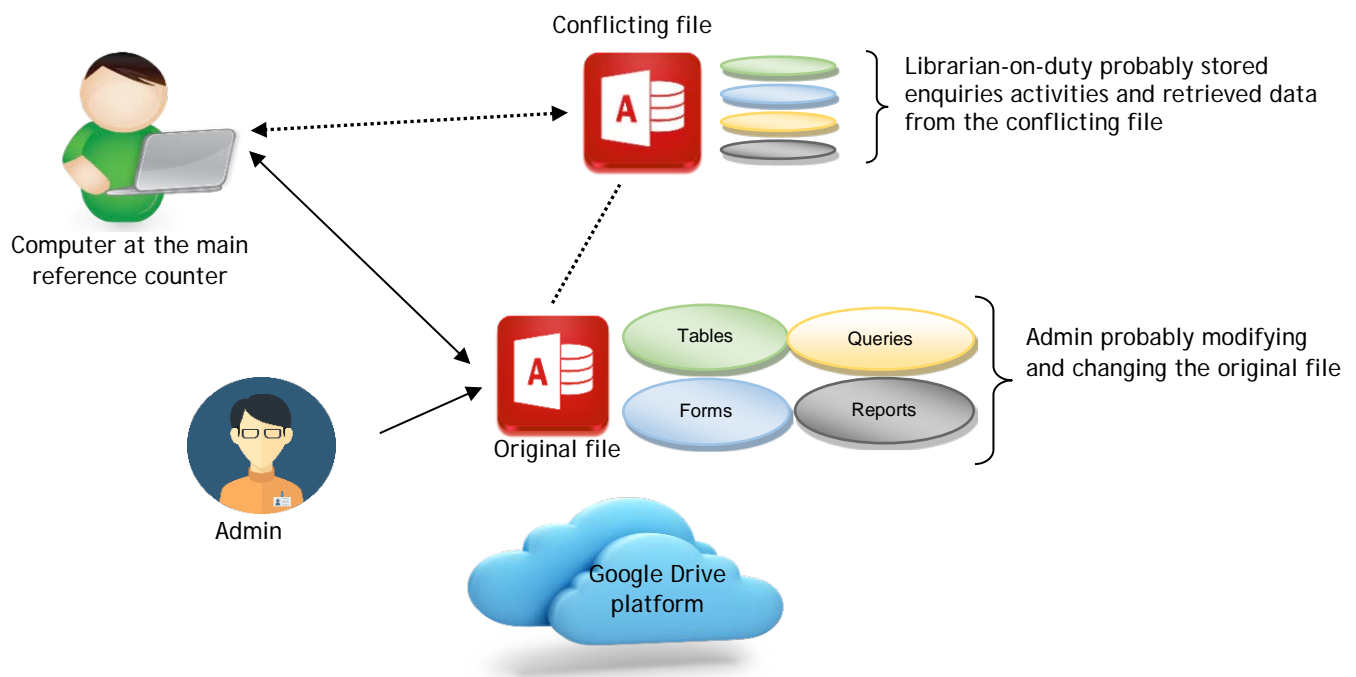


Figure 5: Diagram of R-StaRS in Google Drive environment

After some research on the Internet, we found the best solution was to split the system into two entities, i.e. frontend and backend. In our case, the MS Access file acts as the frontend while the MySQL database is the backend of the system. In the MS Access file, we retained all the forms, queries and reports while the tables are stored in the database. These two are connected using ODBC the connector. In a split setting, the frontend file (R-StaRS) can be installed in any computer (Figure 6). Whenever data is saved on R-StaRS, it will be stored in the tables at the backend database without any file conflict or duplication.



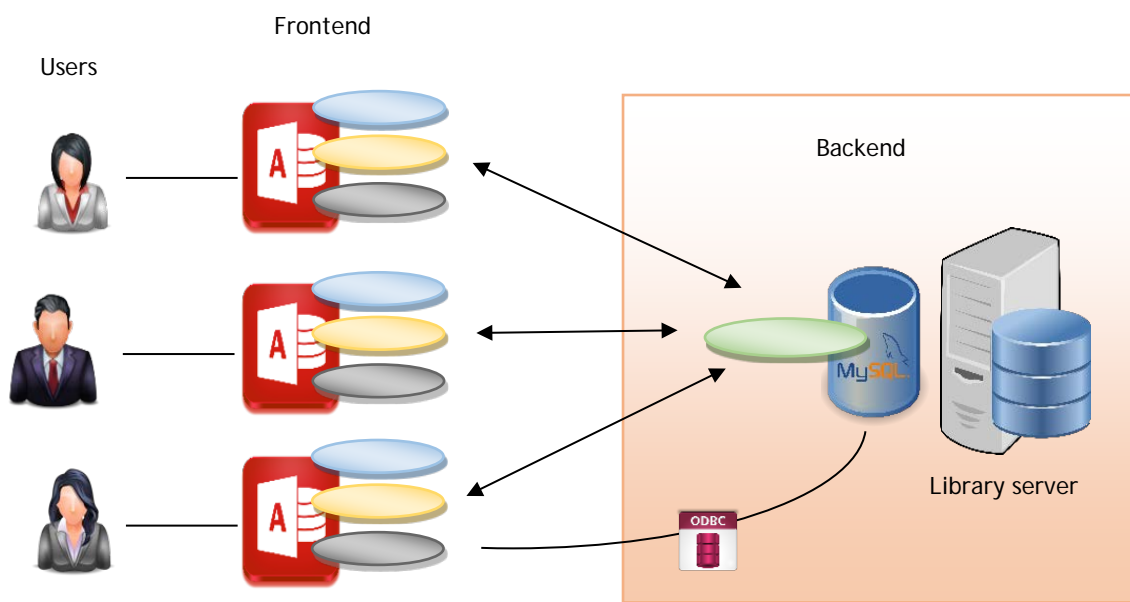


Figure 6: Structure of the new R-StaRS migration system

With this upgraded environment, we extended the use of the system to another counter in the library including branch libraries since it can be easily installed in numerous computers without any conflicting entity like the earlier experience. The implementation was in stages with some customizations in order to meet the needs of each counter/branch.

We are planning to make this system more user-friendly and enhance the features to be more presentable. We also intend to share our knowledge and experiences on how to develop the system with other interested libraries.

## Conclusion

We have implemented R-StaRS at the main reference counter since February 2017 to record reference activities, count number of users served, analyse type of enquiries received, and identify issues, services and facilities. This project has enabled us to collect, monitor and analyse related information for all branches, which is essential in decision making for service improvement and enhancement. The system also acts as a hub to store useful documents for reference by the staff on duty at all counters/branches whenever necessary. It is also cost effective in saving on printing, paper and other costs. It also reduced by more than half of manpower involvement and saved time in filing and other related manual processes. In addition, the system can be easily customized with additional features or modified for different counter/branch requirements as it was developed and maintained by the librarians themselves. In conclusion, we consider that the R-StaRS project was a success and still has room for improvement.



## Information Technology Section Related Sessions

**21 - 22 August 2019**

**Technical University of Applied Sciences Wildau, Berlin, Germany**

***Robots in Libraries: Challenge or Opportunity?***

<https://en.th-wildau.de/ifla-robot>

The rapid development in robotics and artificial intelligence technologies as well as the commercial availability of these products are making in-roads into libraries. Beyond automated storage and retrieval systems, we now have autonomous shelf reading robots, telepresence and humanoid robots, and chatbots and voice activated systems. Robots are becoming our co-workers and a number of libraries around the world have deployed different robots for internal operations as well as public services. This combination of skilled human resources and robotics technologies also complements library services in the fourth industrial revolution (4IR) era.

The Conference will include presentations from experts in the field, panels and round table discussions, hands-on workshop on developing algorithms and applications, visiting robots in action in libraries.

**22-23 Aug, German National Library – Deutsche Nationalbibliothek (DNB), Frankfurt, Germany**

**Big Data SIG**

**Satellite: *Data intelligence in libraries: the actual and artificial perspectives***

There is a growing urgency for library professionals to explore the underlying considerations for administering scholarly, scientific and business data in libraries. From an actual or real-world perspective, the library professional's ability to derive information and insight from data is of paramount importance. For library managers there is a requirement for timely and insightful management information derived from library data generated by the use of online resources and library services. Library professionals need to continuously develop their digital fluency, literacy and data skills to become increasingly more "data savvy", enabling themselves to be smarter in the use, wrangling, visualization and application of data.

Likewise, from an artificial perspective, machine agents are dependent on good quality data to be capable to infer and learn from it through a process of knowledge engineering. Libraries should leverage opportunities to implement interventions that could facilitate optimal access to reputable scientific data, thereby fostering the knowledge process by making data findable and available to information agents. The values of privacy, ethics, and equitable access to information are core to libraries, uniquely positioning them to be providers of high-quality data. In doing so libraries enable information agents to study the academic society from a big data perspective through macro analysis; in the process synthesizing knowledge and extracting structures which can lead to the discovery and communication of meaningful new patterns.

**22 Aug, Central Library Aristotle University of Thessaloniki, Thessaloniki, Greece**

**IT Section with Cataloguing, Subject Analysis and Access, and Bibliography Sections**

***Metadata specialists in the machine age***

<https://www.lib.auth.gr/en/iflawlic2019>

**30-31 Aug, Vatican Library and Library School, Rome (Vatican City)**

**IT Section with Library Theory & Research Education and Training & LIS Education in Developing Countries**

**Satellite: *Transformation of libraries and LIS education in a global world: digital inclusion, social inclusion, lifelong learning***

<http://bit.ly/2VXk4be>

The difficulty of LIS education in this time of rapid change is to anticipate future education needs and the IFLA Global Vision Project is a perfect forum where LIS practitioners and educators can meet internationally and globally to discuss and coordinate their efforts in transforming LIS education for digital inclusion, social inclusion and lifelong learning.

### Information Technology Section Related Sessions (cont'd.)

**Sat 24 Aug, 13:30-15:30, HAEF 101**

IT Section SCI Meeting

**Mon 26 Aug, 09:30-11:30, Trianti**

IT Section

*Emerging Technologies for Libraries: Smart Cities and Blockchain*

**Mon 26 Aug, 11:45-13:15, Mitropoulos**

IT Section and Big Data SIG with Knowledge Management Section

*Data Mining and Artificial Intelligence*

**Mon 26 Aug, 13:30-16:00, Room 1**

Linked Data SIG, Business Meeting

**Tue 27 Aug, 10:30-11:30, Mitropoulos**

Big Data SIG with Preservation and Conservation Section

*Data Challenges in Libraries*

**Tue 27 Aug, 16:15-18:45, Room 3**

IT Section SC II Meeting

**Wed 28 Aug, 11:45-12:45, Lambrakis**

Big Data SIG, Business Meeting



Full IFLA WLIC 2019 program at <https://2019.ifla.org/conference-programme/>



## IFLA Section Information Technology

The Information Technology (IT) Section promotes and advances the application of information and computing technologies to library and information services in all societies, through activities related to best practices and standards, education and training, research, and the marketplace. The scope covers IT for creation, organization, storage, maintenance, access, retrieval, and transfer of information and documents for all types of libraries and information centers; IT for the operation of libraries and information centers; and, related management and policy issues. Of primary importance are applications of IT for supporting access to and delivery of information. In recent years, the use of technology in libraries have expanded to cover improved machine learning and AI techniques, digital humanities, and data analytics.

The section meets annually at the IFLA Congress; in between congresses, members collaborate with other Sections on programs and workshops. There are election ballots every two years as members complete their 4-year term. The IT Section is one of the largest in IFLA with over 300 members from nearly 80 countries, all types of libraries, and a range of disciplines. We welcome all members (<http://www.ifla.org/membership>).

The IT Section's website at <http://www.ifla.org/it> has news and resources regarding activities of the Section, session minutes, publications, and membership details.

The IFLA-IT email list provides a forum for members to exchange ideas and experience in the use of information and communication technologies in libraries. The list address is [ifla-it@infoserv.inist.fr](mailto:ifla-it@infoserv.inist.fr), and subscription is at <http://infoserv.inist.fr/wwsympa.fcgi/info/ifla-it>.

The *Trends & Issues in Library Technology* (TILT) newsletter is published twice a year in January and June/July.

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